

## WINDOW-GUIDED STAGE MECHANISM

Martin E. Lee

### ABSTRACT OF THE DISCLOSURE

5           A guided stage mechanism suitable for supporting a  
reticle in a photolithography machine includes a stage  
movable in the X-Y directions on a base. Laterally  
surrounding the stage is a rectangular window frame  
guide which is driven in the X-axis direction on two  
10 fixed guides by means of motor coils on the window  
frame guide co-operating with magnetic tracks fixed on  
the base. The stage is driven inside the window frame  
guide in the Y-axis direction by motor coils located on  
the stage co-operating with magnetic tracks located on  
15 the window frame guide. Forces from the drive motors  
of both the window frame guide and the stage are  
transmitted through the center of gravity of the stage,  
thereby eliminating unwanted moments of inertia.  
Additionally, reaction forces caused by the drive  
20 motors are isolated from the projection lens and the  
alignment portions of the photolithography machine.  
This isolation is accomplished by providing a  
mechanical support for the stage independent of the  
support for its window frame guide. The window frame  
25 guide is a hinged structure capable of a slight yawing  
(rotational) motion due to hinged flexures which  
connect the window frame guide members.